

REMARKS

Claims 18, 19, 22, 24 and 26 have been amended. Claims 27-32 have been added. Therefore claims 18-32 are pending in the application. Reconsideration is respectfully requested in light of the following remarks.

Objection to the Specification:

The Examiner objected to the Title as not being descriptive. The Title has been amended as suggested by the Examiner.

Claim Objection:

The Examiner objected to claim 26 under 37 CFR 1.175(c) as being of improper dependent form for failing to further limit the subject matter of a previous claims. Claim 26 has been amended to overcome this objection.

Section 102(e) Rejection:

The Examiner rejected claims 18-20 under 35 U.S.C. § 102(e) as being anticipated by Mehta (U.S. Patent 5,679,599). Claim 18 has been amended to recite implanted silicon atoms arranged within regions of said first and second active regions proximate said upper surface of said substrate and laterally adjacent to said second and third portions of said thermally grown oxide, wherein the implanted silicon atoms fill vacancies and interstitial sites within the semiconductor substrate resulting from formation of said trench. Mehta does not teach implanted silicon atoms that fill vacancies and interstitial sites within the semiconductor substrate resulting from formation of the trench. Thus, claims 18-20 are not anticipated by Mehta.

Section 102(b) Rejection:

The Examiner rejected claims 22-26 under 35 U.S.C. § 102(b) as being anticipated by Jang (U.S. Patent 5,399,520). The Examiner refers to Fig. 2H of Jang to teach a dielectric filled trench. As shown in Fig. 2H of Jang, once the trench has been filled, the oxide-nitride film 15/19 has been removed or consumed. Since the oxide-nitride film 15/19 no longer exists once the trench has been filled in Jang (as plainly illustrated by Fig. 2H), Jang does not teach barrier atoms arranged within the semiconductor substrate beneath a spacer that extends above a portion of the semiconductor substrate between the filled trench and a sidewall surface of a masking layer.

Furthermore, Jang does not teach that the barrier atoms fill vacancies and interstitial sites within the semiconductor substrate resulting from formation of the trench, as recited in amended claim 22.

Section 103(a) Rejection:

The Office Action rejected claim 21 under 35 U.S.C. § 103(a) as being unpatentable over Mehta as applied to claim 20 above, and further in view of Lee et al. (U.S. Patent 5,753,561) (hereinafter "Lee"). Applicants respectfully traverse this rejection for at least the reasons given above in regard to claim 20. Applicants also note that the Examiner initially refers to the Lee patent when stating the rejection, but then refers to a different patent (Kawamura) when stating support for the rejection. Therefore, Applicants assert that a proper *prima facie* rejection has not been stated since it is unclear which references the Examiner is attempting to use to reject claim 21.

Added Claims:

In regard to added claims 27-32, none of the cited references, alone or in combination, teach or suggest implanted silicon or barrier atoms arranged within a

semiconductor substrate at each of the opposing edges of a trench isolation structure, wherein the implanted silicon or barrier atoms fill vacancies and interstitial sites within the semiconductor substrate resulting from formation of the trench isolation structure. Therefore, claims 27-32 are patentably distinct over the cited art.

CONCLUSION

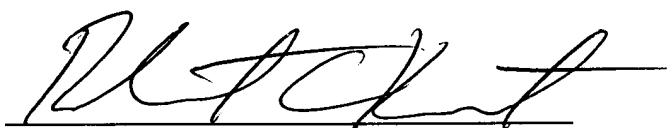
Applicants submit the application is in condition for allowance, and notice to that effect is respectfully requested.

If any extension of time (under 37 C.F.R. § 1.136) is necessary to prevent the above referenced application from becoming abandoned, Applicants hereby petition for such extension. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5500-05001/RCK.

Also enclosed herewith are the following items:

- ☒ Return Receipt Postcard
- ☐ Petition for Extension of Time
- ☒ Notice of Change of Correspondence Address
- ☐ Fee Authorization Form authorizing a deposit account debit in the amount of \$
for fees ().
- ☒ Request for Correction of Filing Receipt

Respectfully submitted,



Name: Robert C. Kowert
Reg. No.: 39,255
Attorney for Applicants

Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C.
P.O. Box 398
Austin, TX 78767-0398
Phone: (512) 853-8850

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